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CONVENTIONAL GINGIVECTOMY FOR GINGIVAL ENLARGEMENT: A CASE REPORT

(PROSEDUR GINGIVEKTOMI KONVENSIONAL PADA PEMBESARAN GUSI: LAPORAN KASUS)

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ABSTRACT

Gingival enlargement can occur due to many factors, ranging from systemically caused plaque to hormonal disorders, due to medications, orthodontic treatments and genetic diseases. This case report aims to describe the management of gingival enlargement using conventional gingivectomy. A 35-year-old male patient came to the hospital with complaints of rounded gums of the upper jaw. The patient reported no pain in his gums. One month after scaling and root planing, the patient underwent a gingivectomy on tooth 12. Evaluation three weeks after the procedure revealed no inflammation, reduction in enlargement, and improved oral hygiene. The determination of etiological factors is crucial in determining the appropriate actions for managing gingival enlargement. Gingivectomy is a procedure to eliminate gingival enlargement and make it easier for patients to maintain oral hygiene. To prevent recurrence in the future, patients need supportive periodontal therapy, which they should undergo regularly

Keywords: gingival enlargement; gingivectomy conventional; plaque

ABSTRAK

Pembesaran gingiva dapat terjadi karena banyak faktor, mulai dari plak yang disebabkan secara sistemik hingga gangguan hormonal, akibat obat-obatan, perawatan orthodonti dan penyakit genetik. Laporan kasus ini bertujuan untuk menggambarkan tatalaksana pembesaran gingiva dengan perawatan gingivektomi konvensional. Seorang pasien laki-laki usia 35tahun datang ke rsgm dengan keluhan gusi rahang atas tampak membulat. Pasien tidak merasakan ada nya rasa sakit pada gusinya tersebut. Setelah 1 bulan setelah dilakukan tindakan scaling dan root planning, pasien dilakukan tindakan gingivektomi pada gigi 12. Evaluasi tiga minggu pasca tindakan tidak terlihat adanya inflamasi, pengurangan pembesaran, dan peningkatan kebersihan mulut. Penentuan faktor etiologi merupakan hal yang sangat penting agar dapat menentukan tindakan yang tepat dalam penatalaksanaan pembesaran gingiva. Gingivektomi merupakan tindakan untuk menghilangkan gingival enlargement dan untuk mempermudah pasien dalam menjaga oral hygiene serta diperlukan supportive periodontal therapy secara berkala untuk melihat apakah terdapat rekurensi dikemudian hari.

***Kata kunci** : plak; pembesaran gingiva;gingivektomi konvensional*

INTRODUCTION

Periodontal treatment not only aims to cure diseases in the dental area and its supporting tissues, but can also improve the aesthetic aspect. Aesthetic factors significantly affect a person's self-confidence. Primarily, if the problem occurs in the teeth and gum tissue in the front of the upper jaw, this undoubtedly affect a person's appearance. Periodontal tissue conditions that often cause aesthetic complaints are gingival enlargement and gum retraction (gingival resection). Gingival enlargement is a condition in which the gum tissue is chronically enlarged, typically due to inflammation of

the periodontal tissue, resulting in the formation of fibrous tissue. It causes the gums to grow beyond their normal size, increasing in gum volume.[1]

Gingival hyperplasia is an inflammation of the gums that occurs due to a buildup of plaque on the surface of the teeth. There are two main types of gingival hyperplasia responses: the edematous type, which shows shiny and red-looking gums, and the fibrous type, which shows hard gums with a stippled texture that disappears, resulting in thick and rounded gums.[2] In Indonesia, the prevalence of gingival enlargement is high; in 2018, 57.6% of people had dental and oral health issues, including gingival overgrowth. One significant worry is drug-induced gingival hyperplasia, especially in individuals using calcium channel blockers like amlodipine. Gingival overgrowth may occur in up to 60% of pregnant women, according to research. The percentage of male patients experiencing gingival hyperplasia was higher than that of women.[3] In the case of fibrous gingival hyperplasia, the treatment that can be done is the gingivectomy procedure.

Plaque bacteria are the primary cause of inflammation in the tissues surrounding the teeth, so controlling plaque is crucial for maintaining the area's health. On overlapping teeth, plaque builds up more easily and is difficult to clean. The main factor for the success of treatment depends on the ability to control plaque.[4]

Systemic diseases can also cause gingival enlargement, such as leukemia and granulomatous diseases (e.g., Wegener's granulomatosis, sarcoidosis). Other groups include neoplastic gingival enlargements, such as benign and malignant gingival tumours. False enlargement can occur in patients with protruding bones or exostosis.[5]

The primary management of gingival enlargement involves removing plaque, as it can be triggered by plaque accumulation. The initial treatment phase I consists of non-surgical procedures, namely dental health education (DHE) and scaling, root planing, and polishing. Edematous gingival tissue generally does not require surgery if the enlargement is reduced after a non-surgical procedure; however, in cases of fibrotic tissue, gingivectomy is necessary.[6]

Gingivectomy is a procedure that involves cutting the gingival tissue to remove the side wall of the tooth pocket. The goal is to eliminate pockets and inflammation in the gingiva, so that a physiologically healthy, well-functioning, and aesthetically pleasing gingiva is formed. The advantages of this procedure include that the technique is easy to

perform, allows for the removal of the pocket to the maximum, provides good visibility during surgery, and enables the shape of the gingiva to be predicted according to the patient's expectations.[7] Gingivectomy can be performed in a variety of ways, such as the conventional way using Kirkland and Orban knives or with a scalpel blade, or with an electrocautery or laser device. Gingivectomy can also be performed with Thermacut Burs, which are sharp burs made of stainless steel or ceramic materials.[8] This case report aims to present a comprehensive case report of gingival enlargement and surgical management using conventional gingivectomy.

CASE REPORT

A 35-year-old male patient came to RSGM UNIMUS with complaints of gingival of the upper and lower jaw that seemed to be enlarged. The patient did not feel any pain in the enlarged gums, only bleeding when brushing their teeth. Patients brush their teeth 2x a day during morning and evening baths. The patient does not use mouthwash and does not smoke. The patient has no history of systemic diseases, drug or food allergies. The patient wants treatment to overcome his enlarged gums.

On an extraoral examination, it appears normal. During the intraoral examination, the OHI-S was 3.5 (average), and the O'Leary score was 30%. In clinical findings, the gingiva showed redness, rounded interdental papillae, a soft consistency, an unstippled texture, and BOP (+) in tooth 12. (Fig. 1) The diagnosis established in this case is localised gingival enlargement.

Figure 1. Labial Aspect, Enlargement Gingiva on Right Second Incisor.

The patient had scaling and root planing as initial treatment. Since the gingiva on tooth 12 remained enlarged two weeks following the SRP, a gingivectomy was planned for the patient. The patient consented to undergo a gingivectomy to improve his oral condition. The gingivectomy procedure was performed one month after the initial treatment phase.

Gingivectomy Procedure

Before the surgical procedure is carried out, root planning is done first. Furthermore, in the work area, perform asepsis using povidone iodine as prophylaxis. Infiltration anesthesia in the

gingival regions of tooth 12. (Fig. 2)

Figure 2. Infiltration Anesthesia.

After the anesthesia has started working, create bleeding points using probes by making 3 points on the mesial, facial, and distal sides. The following action is to make an incision of the facial surface according to the outline with a Kirkland knife or blade no 15 and interdental incision of the gingiva with an orban knife discontinuously with the technique of cutting the external bevel (apical to coronal) and the direction of the incision of 45 degrees against the tooth surface. The incision starts from the apical to the point that has been made with a distance of 1 mm above the bleeding point. (Fig. 3)

Figure 3. Incision.

After that, perform curettage on teeth 12 and 13 using a Gracey curette with a shovelling motion, with the sharp side facing the soft tissue. (Fig. 3)

Figure 4. Curettage Post Gingivectomy.

If no necrotic tissue is present, as indicated by the discharge of fresh blood, perform gingivoplasty on teeth 12 and 13 using blade number 15. Irrigate with saline. (Fig. 5)

Figure 5. NaCl 0.9% Irrigation.

Bleeding control using a tampon and gently massaging the gum wall. Insulation of the work area for the installation of a periodontal dressing. Patients are instructed to brush their teeth using the Charter technique after surgery and are given Ibuprofen analgesic medication every 8 hours. Patient evaluation was carried out at 3 weeks after surgery. At the control visit, there were no

subjective complaints from either patient. There were no signs of inflammation in the interdental papillae, no enlargement, and no redness at the evaluation visit 3 weeks after surgery. The gingival condition began to improve, and the clinician performed scaling and irrigation during this visit. (Fig. 6)

Reasonable plaque control was indicated by better scores on the O'Leary Plaque Index (12%). The Oral Hygiene Index-Simplified (OHI-S) score was also good (1.1). The gingival healing process progressed satisfactorily, and the clinician continuously reinforced the practice of maintaining good oral hygiene.

Figure 6. 3-week control.

DISCUSSION

Initially, the gingivectomy technique was performed using a scalpel. Later, electrocautery was introduced, and more recently, lasers have been developed for gingival tissue incision. However, gingivectomy using a scalpel is still widely done because the cost is relatively low and the procedure can be done relatively easily. Epithelial regeneration occurs more easily with conventional gingivectomy procedures. Cells undergo necrosis, as seen in gingivectomy procedures using lasers, electrocautery, or chemicals, which does not occur in conventional gingivectomy procedures.[9]

Conventional gingivectomy is performed using scalpels and Kirkland and Orban surgical instruments. The use of scalpels offers several advantages, including ease of use, precise incisions with clear margins, rapid healing, and minimal lateral tissue damage. Meanwhile, the disadvantage of scalpels is the bleeding, which results in insufficient visibility and a longer procedure time.[10]

Conventional gingivectomy is performed by removing the lateral wall of the pocket. It aims to eliminate pockets and inflammation of the gingiva, ensuring that the gingival tissue is obtained in a physiologically, functionally, and aesthetically optimal condition. This cutting also aims to optimise the field of view on the entire surface of the dental crown, making it easier to remove deposits that were originally covered by gingival tissue. Another vital reason is that the elimination of this pocket aims to restore the normal depth of the gingival sulcus, allowing for proper maintenance of daily oral health and hygiene.[11]

Gingival cutting can be performed by incision, either externally bevelled or internally bevelled. External bevel, generally used for the elimination of gingival enlargement, which only includes free gingiva. The disadvantage of this initiation is that at the end of the gingivectomy procedure, an open wound arises on the gingival surface. Therefore, periodontal packs should be applied to minimise bacterial contamination and minimise bleeding after gingivectomy [12]

In this case, the use of conventional techniques, due to their ease of use, does not cause tissue damage to the bones and is more economical.[13] The use of a scalpel has a risk of bleeding, but in this case, no significant bleeding was found. Previous research has shown that a comparison of conventional treatments using scalpels and laser diodes revealed that plaque was not easily found when controlling the action with a laser diode, compared to the scalpel method, which resulted in significantly more plaque buildup.[14] The conventional gingivectomy method using scalpels is still the gold standard, but the emphasis on dental health education must be increased to avoid plaque buildup on teeth.[15]

Case selection is important because not all gingival enlargement can be performed directly by surgery. The non-surgical treatment flow must be undergone first, and if there is still gingival enlargement, then gingivectomy is performed. When combined with appropriate plaque control, conventional gingivectomy remains a viable and effective option for treating gingival enlargement.

CONCLUSION

In addition to being a therapeutic treatment, gingivectomy is a component of overall periodontal care. The case results indicate that conventional gingivectomy was effective. The patient's gingiva is no longer inflamed or red, and the enlarged gingiva has vanished. Gingival enlargement can be effectively treated with a gingivectomy and improved oral hygiene.

CONFLICT OF INTEREST

The authors reported no potential conflict of interest.

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